

What is claimed:

1. An electrical spring connection assembly for electrically connecting a conducting case, having a predetermined terminal diameter, and a spark plug, said electrical spring connection assembly comprising:

a base having a securing aperture for receiving the conducting case therein to fixedly secure said electrical spring connection assembly within the conducting case;

a leaf spring portion extending radially out from said base for receiving the spark plug therein, said leaf spring portion creating an engagement force the spark plug must overcome to be positioned within said electrical spring connection assembly; and

a beam spring portion extending out from said leaf spring portion, said beam spring portion creating a retention force to retain the spark plug within said electrical spring connection assembly, said retention force being greater than said engagement force.

2. An electrical spring connection assembly as set forth in claim 1 wherein said leaf spring portion defines a bend diameter smaller than the predetermined terminal diameter of the conducting case.

3. An electrical spring connection assembly as set forth in claim 2 wherein said beam spring portion defines a beam diameter greater than the predetermined terminal diameter of the conducting case.

4. An electrical spring connection assembly as set forth in claim 3 including a detent extending between said leaf spring portion and said beam spring portion.

5. An electrical spring connection assembly as set forth in claim 4 wherein said leaf and beam spring portions include a plurality of arms extending out from said base radially therefrom.

6. An electrical spring connection assembly as set forth in claim 5 wherein each of said plurality of arms includes a distal end.

7. An electrical spring connection assembly as set forth in claim 6 wherein each of said distal ends matingly engages the conducting case.

8. An electrical spring connection assembly as set forth in claim 7 wherein each of said plurality of arms is spaced equidistantly from said base.

9. An electrical spring connection assembly as set forth in claim 8 wherein said leaf spring portion includes a bend extending out from said base that does not engage the conducting case.

10. An electrical spring connection assembly for electrically connecting a high voltage terminal, having a predetermined terminal diameter, and a spark plug, said electrical spring connection assembly comprising:

a base having a securing aperture for receiving the conducting case therein to fixedly secure said electrical spring connection assembly within the high voltage terminal;

a leaf spring portion extending radially out from said base for receiving the spark plug therein, said leaf spring portion creating an engagement force the spark plug must overcome to be positioned within said electrical spring connection assembly; and

a beam spring portion extending out from said leaf spring portion and defining a beam diameter greater than the predetermined terminal diameter of the conducting case, said beam spring portion creating a retention force to retain the spark plug within said electrical spring connection assembly, said retention force being greater than said engagement force.

11. An electrical spring connection assembly as set forth in claim 10 wherein said leaf spring portion defines a bend diameter smaller than the predetermined terminal diameter of the conducting case.

12. An electrical spring connection assembly as set forth in claim 11 including a detent extending between said leaf spring portion and said beam spring portion.

13. An electrical spring connection assembly as set forth in claim 12 wherein said leaf and beam spring portions define a plurality of arms extending out from said base radially therefrom.

14. An electrical spring connection assembly as set forth in claim 13 wherein each of said plurality of arms includes a distal end.

15. An electrical spring connection assembly as set forth in claim 14 wherein each of said distal ends matingly engages the conducting case.

16. An electrical spring connection assembly as set forth in claim 15 wherein each of said plurality of arms is spaced equidistantly from said base.

17. An electrical spring connection assembly as set forth in claim 16 wherein said leaf spring portion includes a bend extending out from said base that does not engage the conducting case.